

## **Historic, Archive Document**

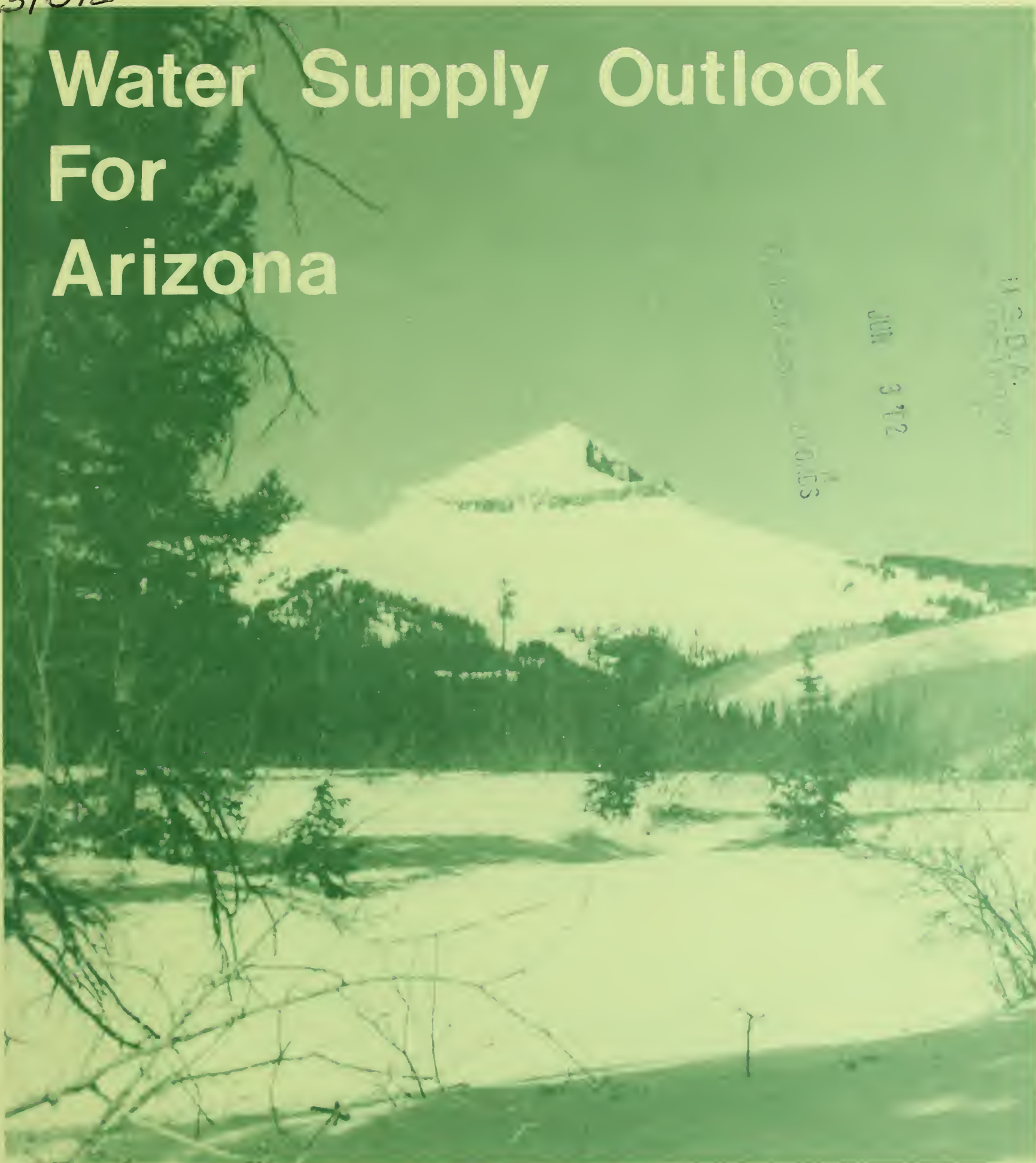
Do not assume content reflects current scientific knowledge, policies, or practices.



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# Water Supply Outlook For Arizona



SOIL CONSERVATION SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

SALT RIVER VALLEY WATER USERS ASSOCIATION  
AND  
ARIZONA DEPARTMENT OF WATER RESOURCES

||||||| AS OF |||||  
**APR. 1, 1982**  
|||||||



## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: "Lone cone, near Norwood, Colorado,  
Blanketed by its winter mantle of snow."*

## PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 111, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE              | ADDRESS   |
|--------------------|---|
| Alaska             | 204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501 |
| Arizona            | 6029 Federal Building, Phoenix, Arizona 85025       |
| Colorado (N. Mex.) | P. O. Box 17107, Denver, Colorado 80217             |
| Idaho              | Room 345, 304 N. 8th. St., Boise, Idaho 83702       |
| Montana            | P. O. Box 98, Bozeman, Montana 59715                |
| Nevada             | P. O. Box 4850, Reno Nevada 89505                   |
| Oregon             | 1220 S.W. Third Ave., Portland, Oregon 97204        |
| Utah               | P.O. Box 11350, Salt Lake City, Utah 84147          |
| Washington         | 360 U.S. Court House, Spokane, Washington 99201     |
| Wyoming            | P. O. Box 2440, Casper, Wyoming 82601               |

## PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



# *WATER SUPPLY OUTLOOK* *FOR* *ARIZONA*

and  
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

*Issued by*

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*Report prepared by*

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## STREAMFLOW FORECASTS FOR THE PERIOD APRIL THROUGH MAY INDICATE NEAR NORMAL SURFACE WATER SUPPLIES FOR ARIZONA.

### WATER SUPPLY

Arizona surface water supplies should be adequate for most water users. Streamflow forecasts for the April-May period are near normal in central Arizona. Major forecasts call for 103% of average flow on the Verde River, 93% of average on Tonto Creek, and 107% on the Salt River. Forecasts are somewhat lower on the Gila drainage but are still near the normal range. Streamflow is forecast at 76% of average on the Gila River at Solomon and 74% at Virden. The San Francisco River is expected to produce about 70% of average flow. The Little Colorado River is forecast at 86% of average at Greer and 62% of average at Lyman Reservoir.

### SNOW COVER

The snowpack in central Arizona and western New Mexico is above average for April 1. Even though most of the snow below 7,000 feet has melted, a substantial snowpack remains at higher elevations. The snowpack between 7,000 and 7,500 feet elevation is discontinuous and melting. The snow cover above 7,500 feet still contains enough water to make the snowpack above average. Snotel sites up to 9,000 feet elevation show that melt water is leaving the snowpack in the higher elevations. The April 1 snow water equivalent is 112% of average on the Salt River watershed, 170% on the Verde River, 113% on the Gila-San Francisco drainage, and 141% on the upper Little Colorado River.

### PRECIPITATION

March precipitation ranged from 170% to 220% of average on the snow zone watersheds. The major precipitation came from a series of storms between March 11 and 20. Much of the precipitation during this period came as rain even at elevations as high as 7,500 feet. Two storm periods of less intensity occurred on March 2-3 and 26-30. Precipitation has now been above normal for three straight months.

### STREAMFLOW

Most major Arizona streams had above average discharge during March. Inflow to the Salt River Project system was 538,200 acre feet for the month. Because of this inflow Salt River Project had to release greater than normal amounts from reservoirs on the Verde River. Diversion canals at Granite Reef could not handle this volume. Releases were made into the Salt River between March 13-25 and March 28-April 1. The highest release was 9100 cfs on March 16. Water flowed in the Salt River through Phoenix during these periods.

March streamflow was above average on the Gila River and near average on the San Francisco River.



STREAMMARCH 1982 FLOW - % AVERAGE

|                                |      |
|--------------------------------|------|
| Salt River                     | 199% |
| Verde River                    | 459% |
| Tonto Creek                    | 624% |
| Gila River at Solomon          | 125% |
| Gila River at Virden           | 139% |
| San Francisco River at Clifton | 92%  |

## RESERVOIR STORAGE

Storage in all major Arizona reservoirs is normal to above normal for April 1. A combined storage of 1,738,000 acre feet is reported for the six Salt River Project reservoirs. This is 86% of capacity. San Carlos reservoir is 30% full with 276,000 acre feet. Lake Pleasant contains 98,000 acre feet at 62% of capacity. Most small reservoirs are filling or at least substantially increasing their water in storage. Willow Lake and Watson Lake near Prescott are reported to be full. Show Low Lake storage has increased by nearly 2,000 acre feet since March 1. Four major reservoirs on the Colorado River have a combined storage of 44,917,000 acre feet which is 84% of capacity. Painted Rock reservoir reported 3,200 acre feet storage as a result of the Salt River releases.

THIS IS THE LAST REPORT OF THE SEASON.



ABOUT  
STREAMFLOW FORECASTS APRIL 1, 1982

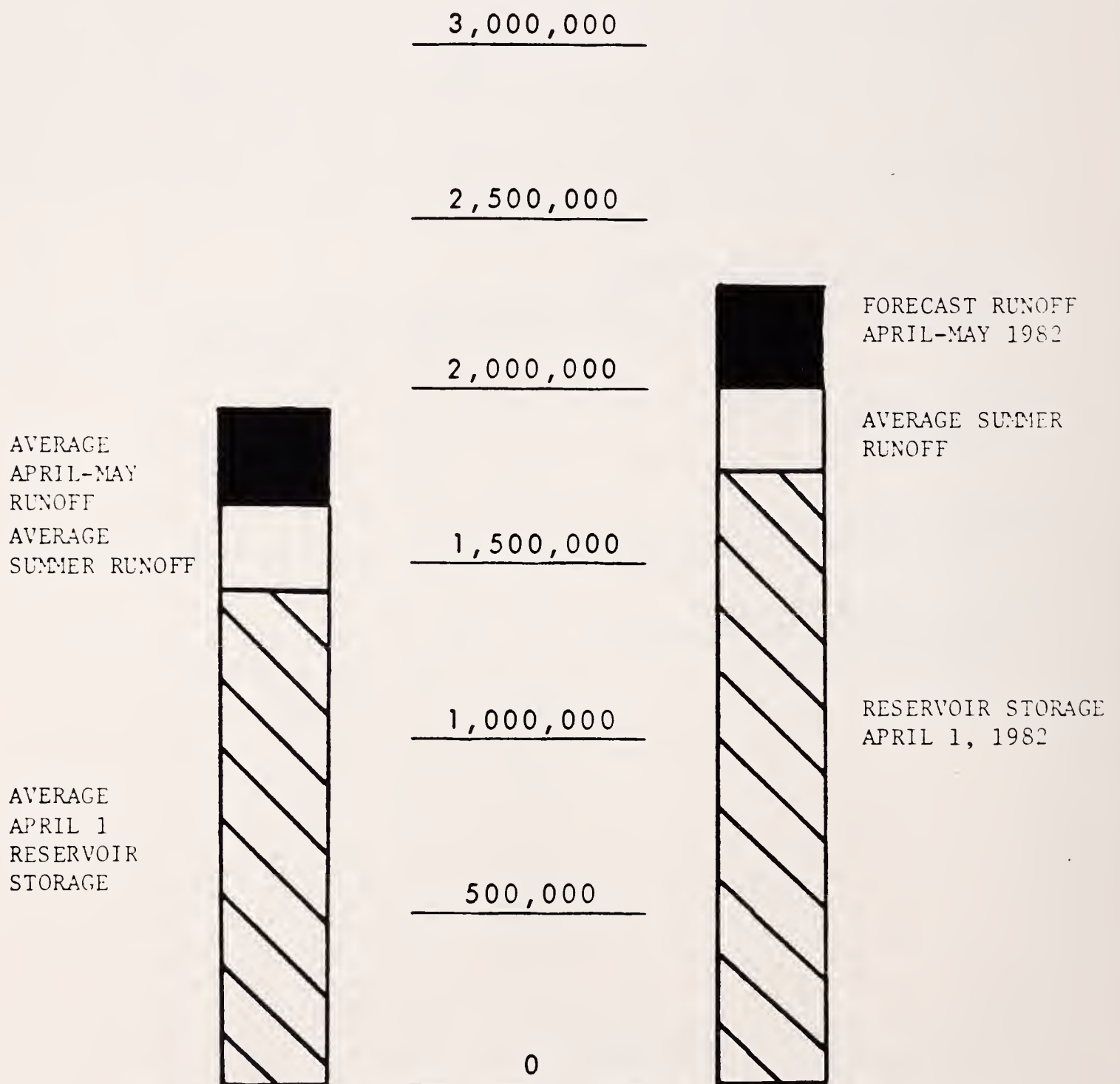
| STREAMFLOW FORECASTS                  |  | APRIL 1, 1982      |                    | THIS YEAR       |                    | PAST RECORD |  |
|---------------------------------------|--|--------------------|--------------------|-----------------|--------------------|-------------|--|
| BASIN, STREAM and/or FORECAST POINT   |  | FORECAST           |                    | FORECAST PERIOD | THOUSAND ACRE FEET |             |  |
|                                       |  | Thousand Acre Feet | Percent of Average |                 | Last Year          | Average †   |  |
| <u>SALT RIVER DRAINAGE</u>            |  |                    |                    |                 |                    |             |  |
| Salt near Roosevelt                   |  | 180                | 107                | Apr-May         | 96.7               | 168.3       |  |
| "                                     |  | 125                | 120                | Apr             | 56.1               | 103.8       |  |
| Tonto Creek near Roosevelt            |  | 12                 | 93                 | Apr-May         | 5.57               | 12.90       |  |
| "                                     |  | 10                 | 98                 | Apr             | 4.29               | 10.17       |  |
| Verde River above Horseshoe           |  | 85                 | 103                | Apr-May         | 37.9               | 82.6        |  |
| "                                     |  | 70                 | 105                | Apr             | 27.1               | 66.5        |  |
| Total Salt River Project Streams      |  | 277                | 105                | Apr-May         | 140.17             | 263.8       |  |
| "                                     |  | 205                | 114                | Apr             | 87.49              | 180.5       |  |
| <u>GILA RIVER DRAINAGE</u>            |  |                    |                    |                 |                    |             |  |
| Gila River at Calva                   |  | 4                  | 9                  | Apr-May         | 3.2                | 33.8        |  |
| Gila River near Gila                  |  | 18                 | 80                 | Apr-May         | 7.91               | 22.62       |  |
| Gila River near Solomon               |  | 39                 | 76                 | Apr-May         | 16.7               | 51.0        |  |
| "                                     |  | 23                 | 71                 | Apr             | 9.0                | 32.4        |  |
| Gila River near Virden                |  | 19                 | 74                 | Apr-May         | 6.37               | 25.53       |  |
| Frisco River at Clifton               |  | 20                 | 71                 | Apr-May         | 8.84               | 28.35       |  |
| Frisco River near Glenwood            |  | 9                  | 63                 | Apr-May         | 3.29               | 14.27       |  |
| <u>LITTLE COLORADO RIVER DRAINAGE</u> |  |                    |                    |                 |                    |             |  |
| Little Colorado River above Lyman Dam |  | 5.4                | 62                 | Apr-Jun         | 2.22               | 8.78        |  |
| Greer                                 |  | 5.4                | 86                 | Apr-Jun         | 3.98               | 6.30        |  |
| <u>GRANITE CREEK DRAINAGE</u>         |  |                    |                    |                 |                    |             |  |
| Granite Creek                         |  | 1.9                | -                  | Apr-May         | -                  | -           |  |
| Willow Creek                          |  | 1.7                | -                  | Apr-May         | -                  | -           |  |
| <u>MIMBRES RIVER DRAINAGE</u>         |  |                    |                    |                 |                    |             |  |
| Mimbres River near Mimbres            |  | 1.3                | -                  | Apr-May         | -                  | -           |  |
| <u>COLORADO RIVER DRAINAGE</u>        |  |                    |                    |                 |                    |             |  |
| Virgin River near Littlefield         |  | 38                 | 79                 | Apr-Jun         | 32.8               | 47.9        |  |
| Lake Mary Inflow                      |  | 1.9                | 88                 | Apr-May         | -                  | 2.16        |  |
| † Based on 15-year period, 1963-77    |  |                    |                    |                 |                    |             |  |
| * Average for less than 15 years      |  |                    |                    |                 |                    |             |  |

# WATER SUPPLY INVENTORY SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

AVERAGE WATER SUPPLY  
ON APRIL 1

ANTICIPATED WATER SUPPLY  
APRIL 1, 1982



Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff

## RESERVOIR STORAGE (Thousand Acre Feet)

APRIL 1, 1982

| BASIN or STREAM  | RESERVOIR                           | Usable Capacity | Usable Storage |           |          |
|--|-------------------------------------|-----------------|----------------|-----------|----------|
|  |                                     |                 | This Year      | Last Year | Average† |
| <u>GILA RIVER DRAINAGE</u>   |                                     |                 |                |           |          |
| Agua Fria  | Lake Pleasant                       | 157.6           | 97.8           | 103.6     | 78.6     |
| Granite  | Watson Lake                         | 4.7             | 4.8            | 2.4       | 3.3      |
| Granite  | Willow Creek                        | 6.1             | 6.1            | 0.9       | 2.9      |
| Gila   | Painted Rock Dam                    | 2,492.0         | 3.2            | 0.0       | -        |
| Gila   | San Carlos                          | 935.0           | 276.0          | 611.0     | 261.0    |
| Salt (4)   | Roosevelt, Apache, Canyon & Saguaro | 1,709.0         | 1,436.0        | 1,388.0   | 1,251.0  |
| Verde (2)  | Bartlett & Horseshoe                | 309.6           | 301.9          | 98.5      | 148.8    |
| Salt & Verde   | 6 Salt River Project Reservoirs     | 2,019.0         | 1,737.9        | 1,486.5   | 1,399.8  |
| <u>COLORADO RIVER DRAINAGE</u>   |                                     |                 |                |           |          |
| Colorado   | Lake Havasu                         | 619.4           | 561.0          | 575.0     | 557.0    |
| Colorado   | Lake Mohave                         | 1,810.0         | 1,677.0        | 1,705.0   | 1,667.0  |
| Colorado   | Lake Mead                           | 26,159.0        | 23,038.0       | 22,229.0  | 17,302.0 |
| Colorado   | Lake Powell                         | 25,002.0        | 19,641.0       | 21,585.0  | 10,069.0 |
| Little Colorado  | Lyman                               | -               | -              | -         | -        |
| Little Colorado  | Show Low Lake                       | 5.1             | 2.8            | 1.0       | 2.3      |
| † Based on 15-year average, 1963-77<br>* Average is for less than 15 years of record |                                     |                 |                |           |          |

BASIN SNOW COVER  
GOES WEST SATELLITE

MARCH 31, 1982



PREVIOUS SNOW COVER

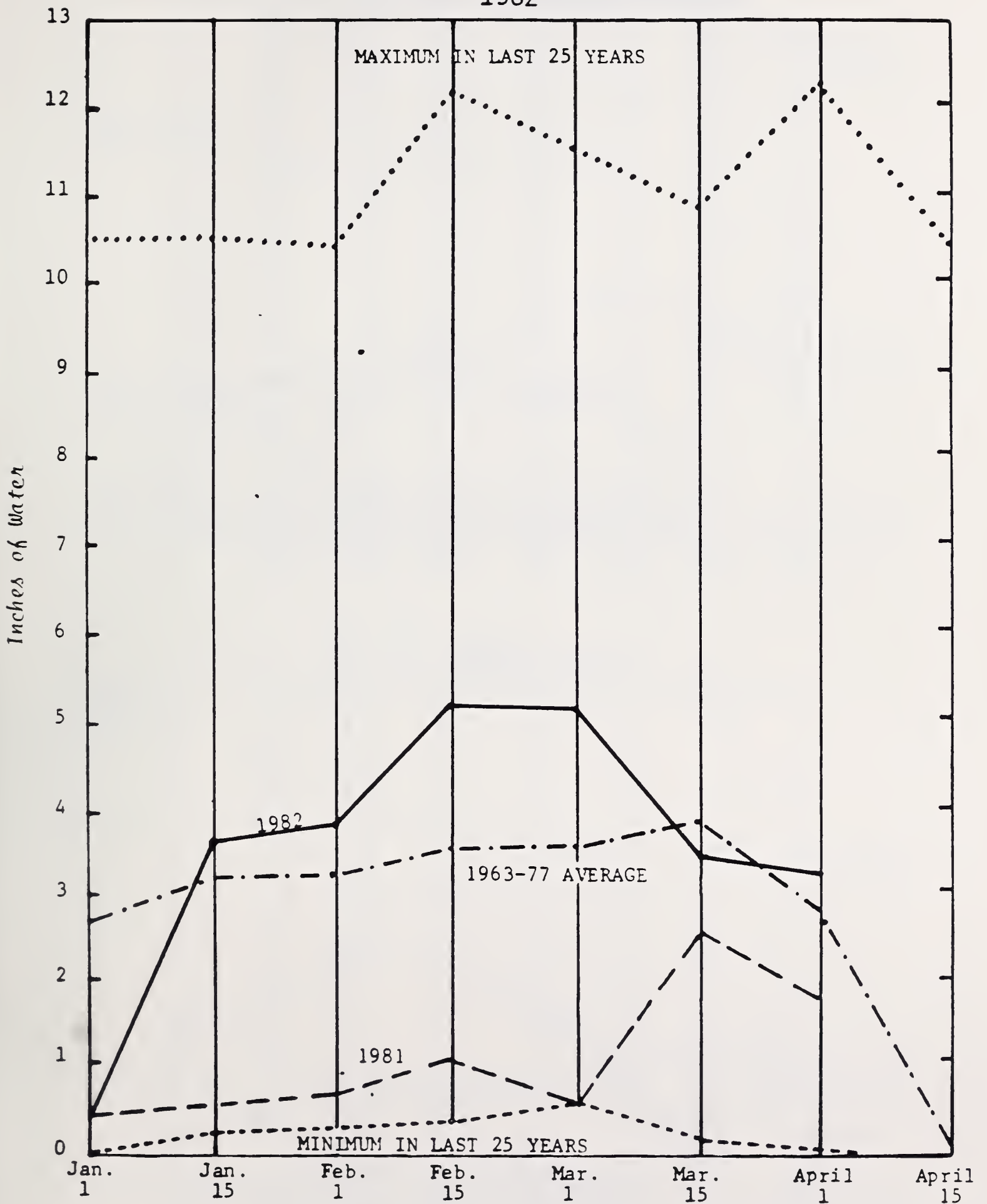
|               | VERDE RIVER | SALT RIVER |  | VERDE RIVER | SALT RIVER |
|---------------|-------------|------------|--|-------------|------------|
| DECEMBER 1981 |             |            |  |             |            |
| 2             | 36%         | 24%        |  |             |            |
| 7             | 22%         | 8%         |  |             |            |
| 8             | 14%         | 7%         |  |             |            |
| 9             | 13%         | 4%         |  |             |            |
| 10            | 2%          | 3%         |  |             |            |
| JANUARY 1982  |             |            |  |             |            |
| 4             | 66%         | 57%        |  |             |            |
| 13            | 56%         | 43%        |  |             |            |
| 25            | 59%         | 18%        |  |             |            |
| 26            | 55%         | 18%        |  |             |            |
| FEBRUARY 1982 |             |            |  |             |            |
| 1             | 20%         | 18%        |  |             |            |
| 12            | 18%         | 21%        |  |             |            |
| 19            | 17%         | 18%        |  |             |            |
| 22            | 13%         | 16%        |  |             |            |
| MARCH 1982    |             |            |  |             |            |
| 3             | 10%         | 13%        |  |             |            |
| 4             | 7%          | 13%        |  |             |            |
| 22            | 22%         | 14%        |  |             |            |
| 24            | 11%         | 11%        |  |             |            |
| 23            | 13%         | 11%        |  |             |            |
| 31            | 6%          | 12%        |  |             |            |



# ARIZONA

## AVERAGE SNOW COVER

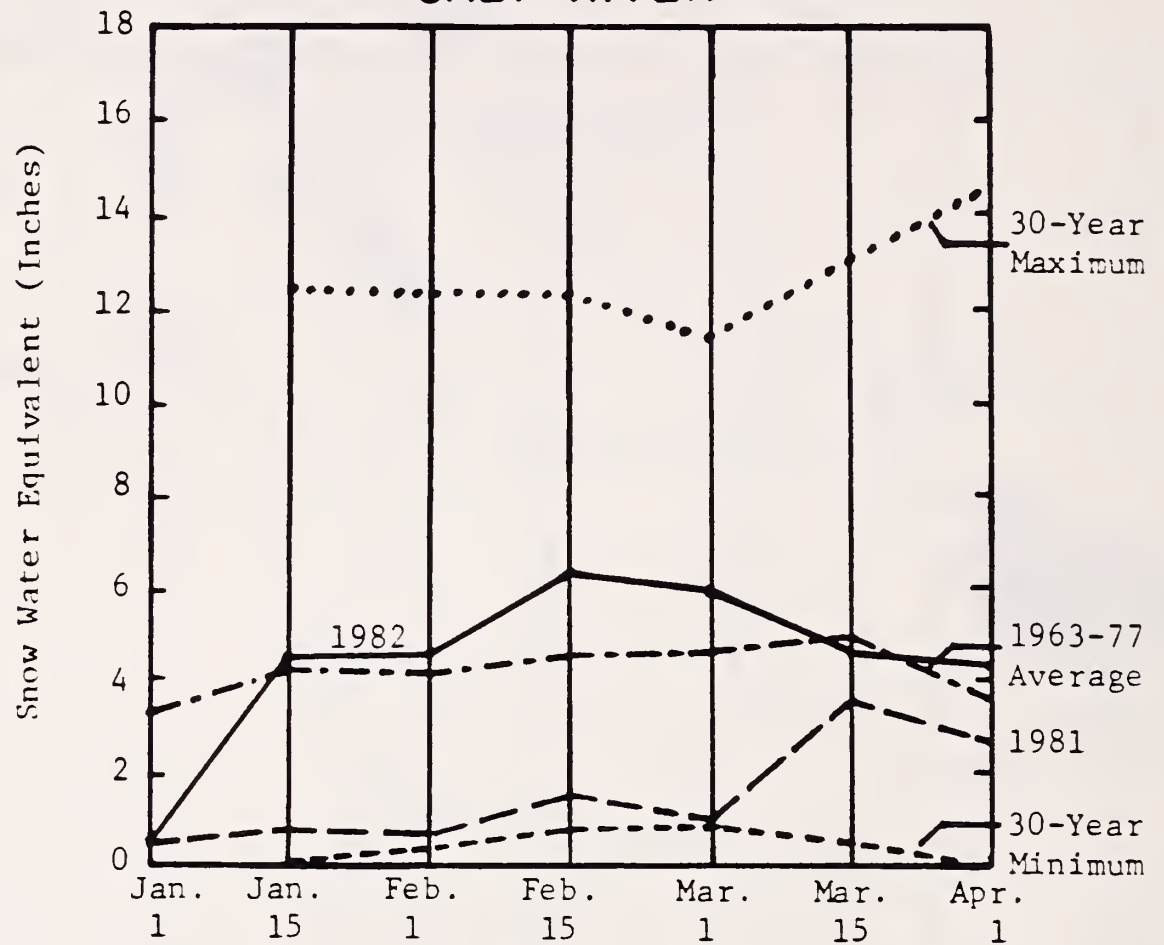
1982



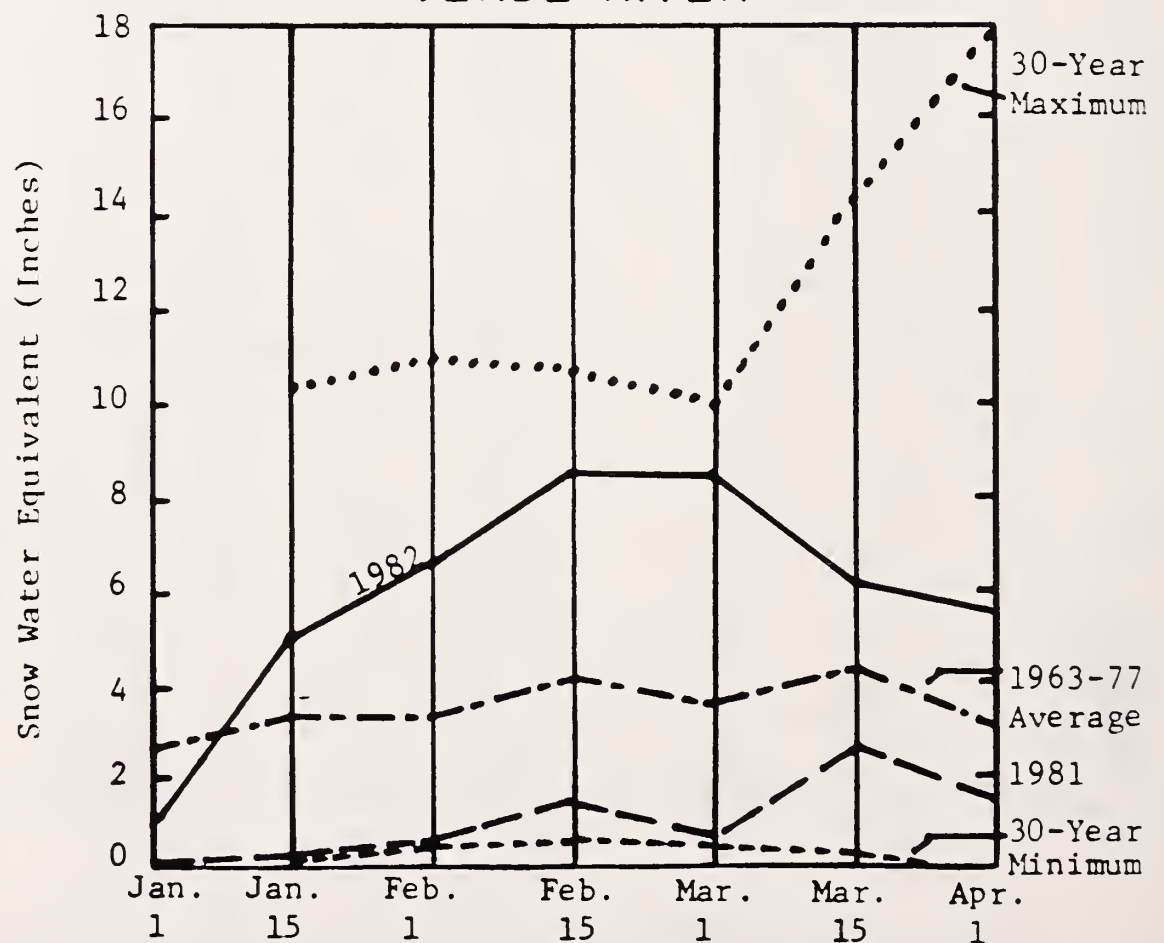
This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

# WATERSHED SNOW COVER

## SALT RIVER

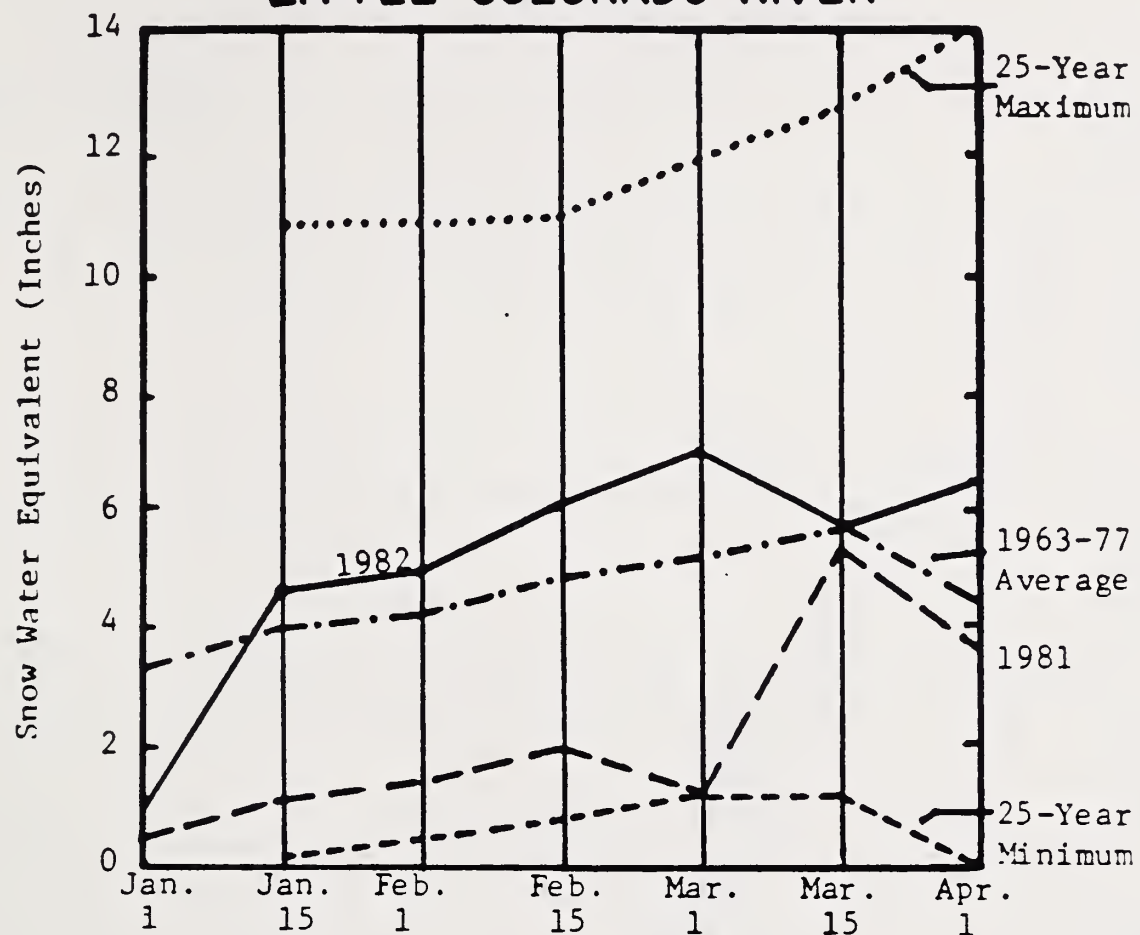


## VERDE RIVER

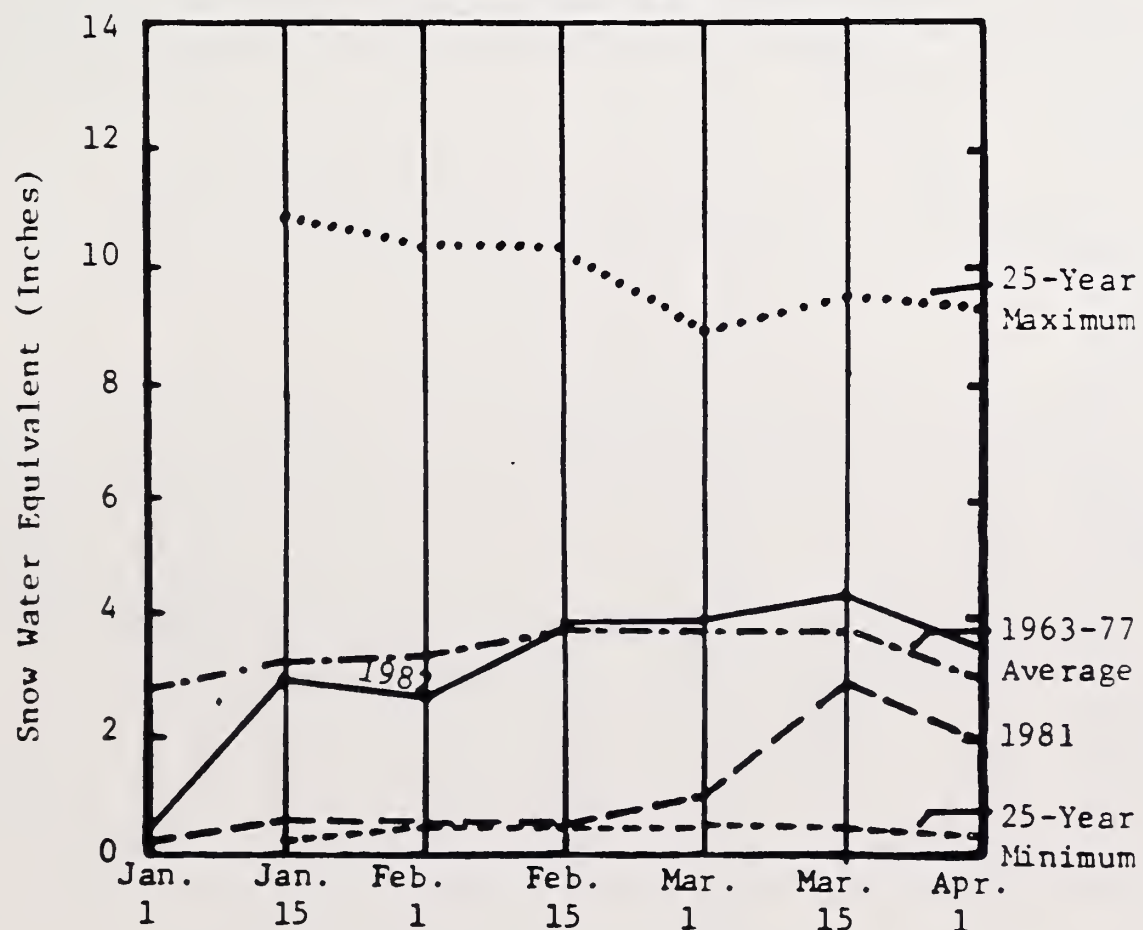


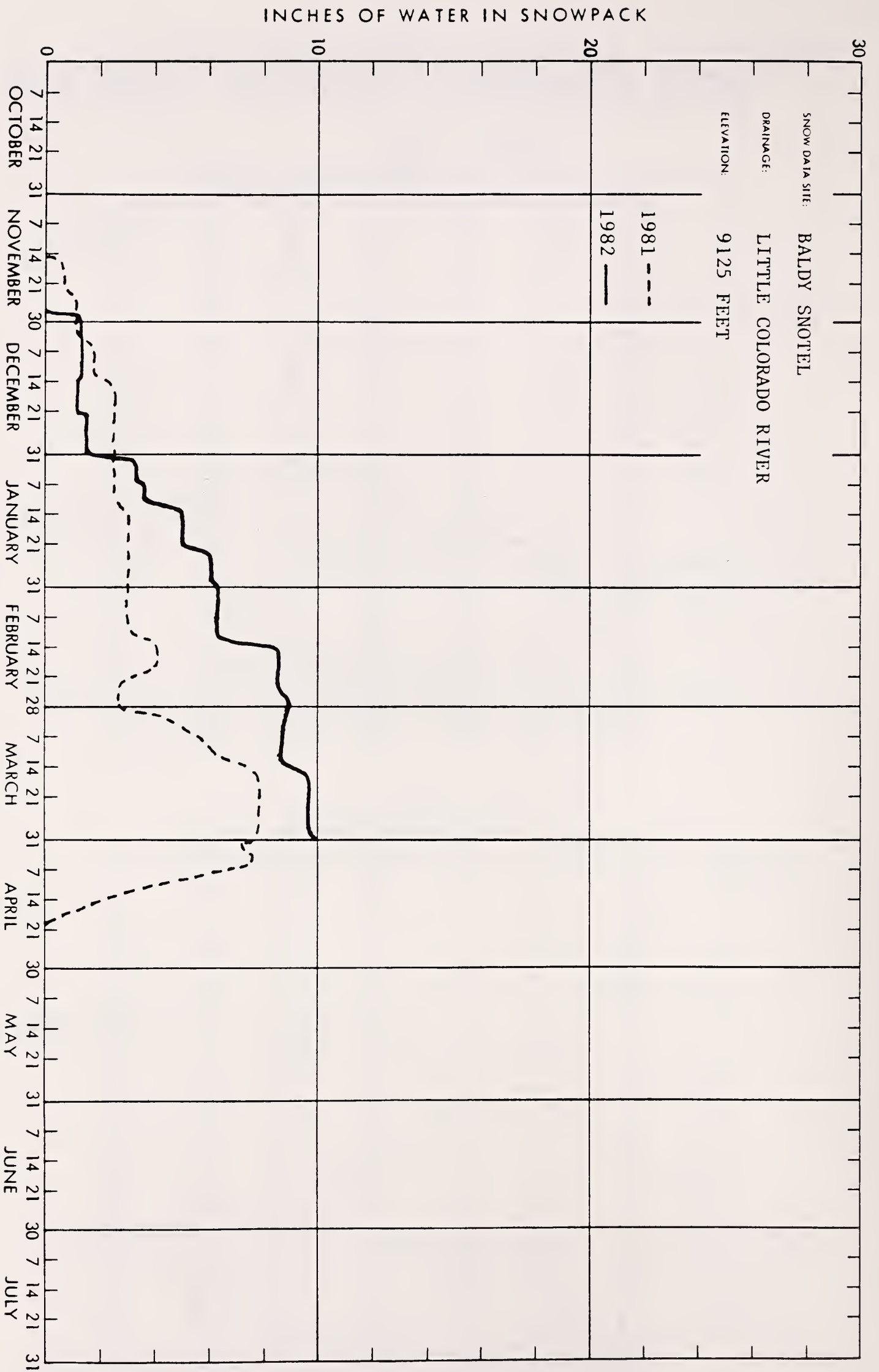
# WATERSHED SNOW COVER

## LITTLE COLORADO RIVER



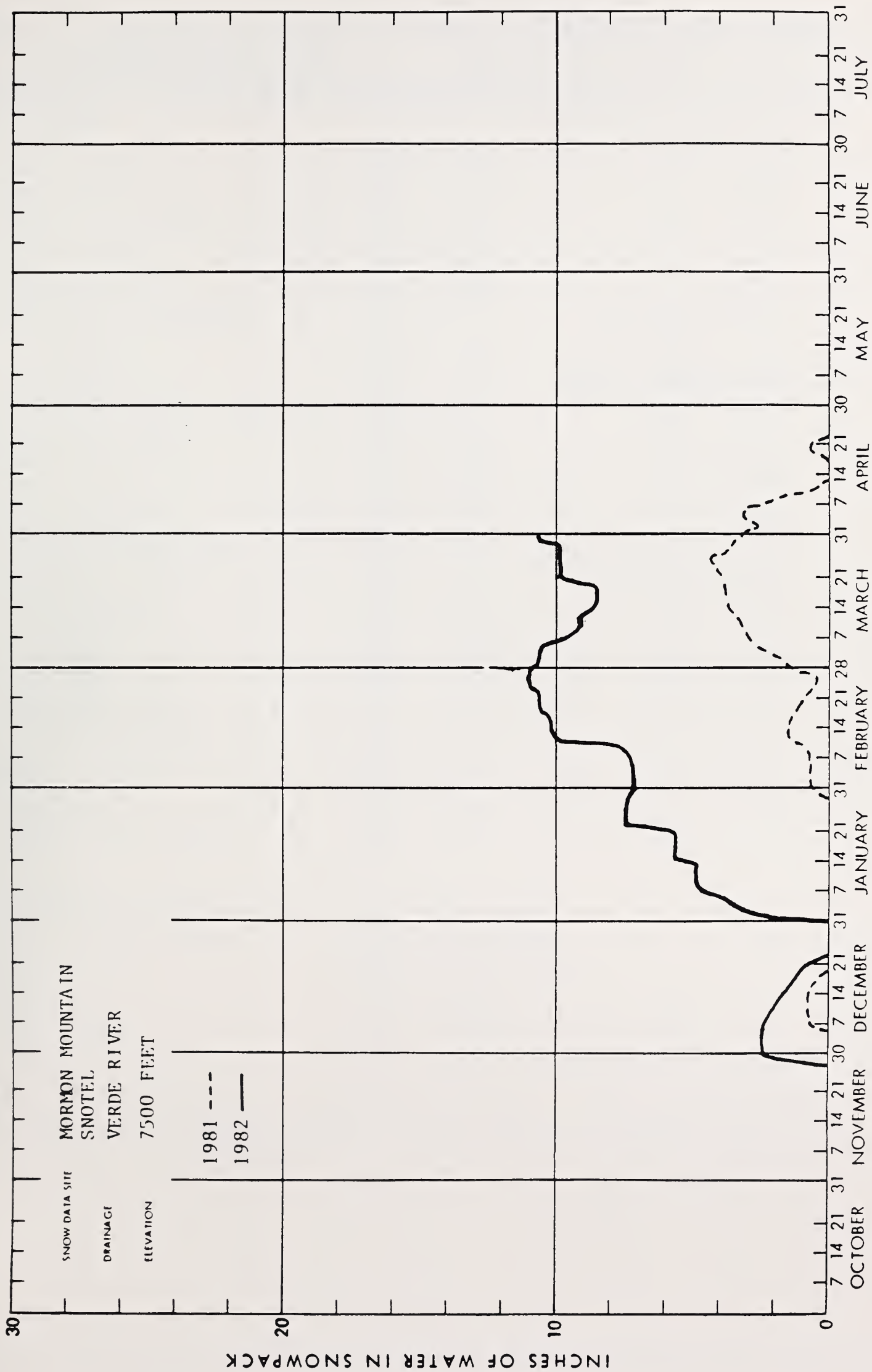
## GILA RIVER





x





**SUMMARY of SNOW MEASUREMENTS** (COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF |         |
|----------------------------------|----------------------------|--------------------------------------|---------|
|                                  |                            | Last Year                            | Average |
| <u>ABOUT MARCH 15, 1982</u>      |                            |                                      |         |
| Gila                             | 10                         | 139                                  | 110     |
| Salt                             | 10                         | 124                                  | 92      |
| Verde                            | 10                         | 258                                  | 148     |
| Little Colorado                  | 5                          | 112                                  | 100     |
| <u>ABOUT APRIL 1, 1982</u>       |                            |                                      |         |
| Gila                             | 10                         | 180                                  | 113     |
| Salt                             | 10                         | 169                                  | 112     |
| Verde                            | 10                         | 329                                  | 170     |
| Little Colorado                  | 5                          | 151                                  | 141     |

## SNOW

ABOUT APRIL 1, 1982

| DRAINAGE BASIN and or SNOW COURSE |           | THIS YEAR      |                     |                        | PAST RECORD            |           |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|-----------|
|                                   |           | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (Inches) |           |
| NAME                              | Elevation |                |                     |                        | Last Year              | Average † |
| <b>SALT RIVER</b>                 |           |                |                     |                        |                        |           |
| Baldy*                            | 9220      | 4/2            | 24                  | 9.0                    | 5.5                    | 6.0       |
| BALDY SNOTEL                      | 9220      | 4/1            | -                   | 9.8                    | 7.5                    | -         |
| Beaver Head                       | 8000      | 3/30           | 1                   | 0.2                    | 0.5                    | 1.6       |
| BONITO ROCK SNOTEL                | 8270      | 4/1            | -                   | 13.1                   | -                      | -         |
| Canyon Creek                      | 7500      | 3/31           | 1                   | 0.4                    | 0.0                    | 2.2       |
| Canyon Point                      | 7600      | 3/31           | 0                   | 0.0                    | 0.0                    | 2.3**     |
| Coronado Trail                    | 8400      | 3/30           | 0                   | 0.0                    | 0.0                    | 1.3       |
| CORONADO TRAIL SNOTEL             | 8400      | 4/1            | -                   | 0.0                    | 0.0                    | -         |
| Forest Dale                       | 6430      | 3/30           | 0                   | 0.0                    | 0.0                    | 0.2       |
| Ft. Apache                        | 9160      | 4/2            | 25                  | 8.5                    | 6.2                    | 6.3       |
| Hannagan Meadows                  | 9090      | 3/30           | 36                  | 11.9                   | 7.0                    | 8.4**     |
| HANNAGAN MEADOWS SNOTEL           | 8960      | 4/1            | -                   | 12.9                   | 9.9                    | -         |
| Hawley Lake                       | 8250      | 3/30           | 24                  | 10.7                   | 5.5                    | 4.4**     |
| HAWLEY LAKE SNOTEL                | 8250      | 4/1            | -                   | 10.9                   | 4.7                    | -         |
| Heber                             | 7640      | 3/31           | 3                   | 0.9                    | 0.2                    | 2.3       |
| HEBER SNOTEL                      | 7640      | 4/1            | -                   | 0.4                    | 0.0                    | -         |
| Maverick Fork                     | 9050      | 4/2            | 30                  | 11.0                   | 6.3                    | 7.6       |
| MAVERICK FORK SNOTEL              | 9200      | 4/1            | -                   | 9.4                    | 5.5                    | -         |
| McNary                            | 7225      | 3/30           | 0                   | 0.0                    | 0.4                    | 1.1       |
| McNARY SNOTEL                     | 7225      | 4/1            | -                   | 0.0                    | 0.0                    | -         |
| Milk Ranch                        | 7000      | 3/30           | 0                   | 0.0                    | 0.0                    | 0.7       |
| Mt. Ord (A)                       | 11000     | 3/23           | 95                  | 32.4                   | 21.8                   | 26.7**    |
| Nutriosio *                       | 8500      | 3/30           | 0                   | 0.0                    | 0.0                    | 0.9       |
| Promontory Butte                  | 7900      | 3/31           | 48                  | 19.2                   | 8.4                    | 10.7**    |
| PROMONTORY SNOTEL                 | 7900      | NO REPORT      |                     |                        | 11.0                   | -         |
| Smith Cienega (A)                 | 9850      | 3/23           | 75                  | 26.3                   | 15.3                   | 20.9**    |
| Sunrise Summit                    | 10600     | 4/1            | 62                  | 22.0                   | 11.5                   | 15.8**    |
| Wilson Lake                       | 9000      | 4/1            | 37                  | 15.0                   | 9.3                    | 8.9**     |
| Workman Creek                     | 6900      | 3/31           | 5                   | 2.8                    | 0.0 E                  | 3.2       |
| WORKMAN CREEK SNOTEL              | 6900      | 4/1            | -                   | 0.0                    | 0.0                    | -         |
| <b>LOWER COLORADO RIVER</b>       |           |                |                     |                        |                        |           |
| Bill Williams Intermediate        | 8550      | NO REPORT      |                     |                        | 4.8                    | 8.6**     |
| Bill Williams Summit              | 8950      | NO REPORT      |                     |                        | 9.6                    | 11.6**    |
| Bright Angel                      | 8400      | LATE REPORT    |                     |                        | 7.1                    | -         |
| Chalender *                       | 7100      | 3/30           | 7                   | 2.6                    | 0.0                    | 1.6       |
| Fort Valley                       | 7350      | 3/30           | 2                   | 0.4                    | -                      | 1.3       |
| Grand Canyon                      | 7500      | 3/30           | 0                   | 0.0                    | 0.0                    | 1.1       |
| Williams Ski Run                  | 7720      | 3/31           | 46                  | 17.0                   | 6.3                    | 7.8**     |

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. E = estimate.

## SNOW

ABOUT APRIL 1, 1982

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. E = estimate or correlation



# SNOW ABOUT APRIL 1, 1982

| DRAINAGE BASIN and or SNOW COURSE |           | THIS YEAR      |                     |                        | PAST RECORD            |           |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|-----------|
|                                   |           | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (Inches) |           |
| NAME                              | Elevation |                |                     |                        | Last Year              | Average † |
| <u>LITTLE COLORADO RIVER</u>      |           |                |                     |                        |                        |           |
| Baldy                             | 9220      | 4/2            | 24                  | 9.0                    | 5.5                    | 6.0       |
| BALDY SNOTEL                      | 9220      | 4/1            | -                   | 9.8                    | 7.5                    | -         |
| Canyon Creek                      | 7500      | 3/31           | 1                   | 0.4                    | 0.0                    | 2.2       |
| Canyon Point                      | 7600      | 3/31           | 0                   | 0.0                    | 0.0                    | 2.3**     |
| Cheese Springs                    | 8600      | 4/1            | 17                  | 6.5                    | 4.3                    | 5.3**     |
| Forest Dale                       | 6430      | 3/30           | 0                   | 0.0                    | 0.0                    | 0.2       |
| Ft. Apache                        | 9160      | 4/2            | 25                  | 8.5                    | 6.2                    | 6.3       |
| Fort Valley                       | 7350      | 3/20           | 2                   | 0.4                    | -                      | 1.3       |
| Happy Jack                        | 7630      | 3/30           | 14                  | 4.8                    | 1.4                    | 2.3       |
| Heber                             | 7640      | 3/31           | 3                   | 0.9                    | 0.2                    | 2.3       |
| HEBER SNOTEL                      | 7640      | 4/1            | -                   | 0.4                    | 0.0                    | -         |
| Lake Mary                         | 6970      | 3/31           | 1                   | 0.4                    | 0.0                    | -         |
| McNary                            | 7225      | 3/30           | 0                   | 0.0                    | 0.4                    | 1.1       |
| McNARY SNOTEL                     | 7225      | 4/1            | 0                   | 0.0                    | 0.0                    | -         |
| Mormon Lake                       | 7350      | 3/31           | 8                   | 2.7                    | 0.5                    | 2.7       |
| Mormon Mountain                   | 7500      | 3/31           | 23                  | 9.3                    | 1.6                    | 4.3       |
| MORMON MOUNTAIN SNOTEL            | 7500      | 4/1            | -                   | 10.6                   | 3.0                    | -         |
| Mormon Mtn. Summit #2             | 8470      | 3/31           | 64                  | 25.8                   | 0.0                    | -         |
| Nutriosio *                       | 8500      | 3/30           | 0                   | 0.0                    | 9.6                    | 0.9       |
| Promontory Butte                  | 7900      | 3/31           | 48                  | 19.2                   | 8.4                    | 10.7**    |
| PROMONTORY SNOTEL                 | 7900      | NO REPORT      |                     |                        | 11.0                   | -         |
| Snow Bowl #1                      | 10260     | 3/30           | 70                  | 22.5                   | 8.0                    | 10.8      |
| Snow Bowl #2                      | 11000     | 3/30           | 93                  | 29.5                   | 13.5                   | 18.6**    |
| Wilson Lake                       | 9000      | 4/1            | 37                  | 15.0                   | 9.3                    | 8.9**     |

† 1963-77 15-year average. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.

**SNOW** ABOUT MARCH 15, 1982

| DRAINAGE BASIN and or SNOW COURSE |           | THIS YEAR      |                     |                        | PAST RECORD            |           |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|-----------|
|                                   |           | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (Inches) |           |
| NAME                              | Elevation |                |                     |                        | Last Year              | Average † |
| <u>SALT RIVER</u>                 |           |                |                     |                        |                        |           |
| Baldy *                           | 9220      | 3/11           | 21                  | 7.4                    | 4.6                    | 7.3       |
| BALDY SNOTEL                      | 9220      | 3/15           | --                  | 9.5                    | 7.7                    | ---       |
| Beaver Head                       | 8000      | 3/15           | 8                   | 1.4                    | 3.0                    | 2.4       |
| BONITO ROCK SNOTEL                | 8270      | 3/15           | --                  | 12.5                   | ---                    | ---       |
| Canyon Creek                      | 7500      | 3/10           | 3                   | 1.1                    | 2.1                    | 3.5       |
| Canyon Point                      | 7600      | 3/10           | 7                   | 2.3                    | 2.5                    | 3.9**     |
| Coronado Trail                    | 8400      | 3/15           | 9                   | 1.1                    | 3.1                    | 2.4       |
| CORONADO TRAIL SNOTEL             | 8400      | 3/15           | --                  | 1.2                    | 3.3                    | ---       |
| Forest Dale                       | 6430      | 3/15           | 2                   | 0.5                    | 0.0                    | 0.5       |
| Ft. Apache                        | 9160      | 3/11           | 25                  | 8.0                    | 7.2                    | 7.8       |
| Hannagan Meadows                  | 9090      | 3/15           | 43                  | 12.3                   | 6.0                    | 9.0**     |
| HANNAGAN MEADOWS SNOTEL           | 8960      | 3/15           | --                  | 11.9                   | 10.9                   | ---       |
| Hawley Lake                       | 8250      | 3/15           | 31                  | 11.9                   | 6.4                    | 6.7**     |
| HAWLEY LAKE SNOTEL                | 8250      | 3/15           | --                  | 11.1                   | 5.5                    | ---       |
| Heber                             | 7640      | 3/10           | 5                   | 2.0                    | 2.2                    | 3.8       |
| HEBER SNOTEL                      | 7640      | 3/15           | --                  | 0.0                    | 3.1                    | ---       |
| Maverick Fork                     | 9050      | NOT SCHEDULED  |                     |                        | 3.5E                   | 9.1       |
| MAVERICK FORK SNOTEL              | 9200      | 3/15           | --                  | 9.7                    | 6.3                    | ---       |
| McNary                            | 7225      | 3/15           | 6                   | 1.0                    | 3.3                    | 2.0       |
| MCNARY SNOTEL                     | 7225      | 3/15           | --                  | 0.0                    | 2.3                    | ---       |
| Milk Ranch                        | 7000      | 3/15           | 5                   | 0.6                    | 2.0                    | 0.8       |
| Mt. Ord (A)                       | 11000     | NOT SCHEDULED  |                     |                        | ---                    | ---       |
| Nutriosio *                       | 8500      | 3/15           | 6                   | 0.9                    | 2.7                    | 1.5       |
| Promontory Butte                  | 7900      | 3/10           | 38                  | 14.9                   | 8.2                    | 12.7**    |
| PROMONTORY SNOTEL                 | 7900      | NO REPORT      |                     |                        | 7.4                    | ---       |
| Smith Cienega (A)                 | 9850      | NOT SCHEDULED  |                     |                        | ---                    | ---       |
| Sunrise Summit                    | 10600     | 3/12           | 56                  | 16.4                   | 10.8                   | 14.6**    |
| Wilson Lake                       | 9000      | 3/11           | 34                  | 11.5                   | 8.1                    | 10.5**    |
| Workman Creek                     | 6900      | 3/16           | 10                  | 2.8                    | 2.5                    | 5.4       |
| WORKMAN CREEK SNOTEL              | 6900      | 3/15           | --                  | 1.3                    | 2.1                    | ---       |
| <u>LOWER COLORADO RIVER</u>       |           |                |                     |                        |                        |           |
| Bill Williams Intermediate        | 8550      | NO SURVEY      |                     |                        | 3.5                    | 8.9**     |
| Bill Williams Summit              | 8950      | NO SURVEY      |                     |                        | 6.6                    | 11.5**    |
| Bright Angel                      | 8400      | NO REPORT      |                     |                        | 7.1                    | --        |
| Chalender *                       | 7100      | 3/16           | 10                  | 3.1                    | --                     | 2.6       |
| Fort Valley                       | 7350      | 3/15           | 4                   | 0.8                    | 0.6                    | 2.0       |
| Grand Canyon                      | 7500      | 3/16           | 2                   | 0.6                    | 0.8                    | 1.4       |
| Williams Ski Run                  | 7720      | 3/16           | 45                  | 15.0                   | 4.8                    | 8.0**     |

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. E = Estimate.

**SNOW ABOUT MARCH 15, 1982**

| SNOW ABOUT MARCH 15, 1982         |           | THIS YEAR      |                     |                        | PAST RECORD            |           |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|-----------|
| DRAINAGE BASIN and or SNOW COURSE |           | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (Inches) |           |
| NAME                              | Elevation |                |                     |                        | Last Year              | Average † |
| GILA RIVER                        |           |                |                     |                        |                        |           |
| Bear Wallow                       | 8100      | 3/15           | 9                   | 3.0                    | 4.5                    | 4.2       |
| Beaver Head                       | 8000      | 3/15           | 8                   | 1.4                    | 3.0                    | 2.4       |
| Coronado Trail                    | 8400      | 3/15           | 9                   | 1.1                    | 3.1                    | 2.4       |
| CORONADO TRAIL SNOTEL             | 8400      | 3/15           | -                   | 1.2                    | 3.3                    | -         |
| Emory Pass #1 *                   | 7800      | DISCONTINUED   |                     |                        | 0.1                    | 0.5**     |
| Emory Pass #2 *                   | 7800      | 3/16           | 0                   | 0.0                    | 0.3                    | 1.1**     |
| Frisco Divide                     | 8000      | 3/15           | 7                   | 1.1                    | 1.7                    | 1.9       |
| FRISCO DIVIDE SNOTEL              | 8000      | 3/15           | -                   | 1.1                    | 2.1                    | -         |
| Hannagan Meadows *                | 9090      | 3/15           | 43                  | 12.3                   | 6.0                    | 9.0**     |
| HANNAGAN MEADOWS SNOTEL           | 8960      | 3/15           | -                   | 11.9                   | 10.9                   | -         |
| Hummingbird (A)                   | 10550     | NOT SCHEDULED  |                     |                        | -                      | 16.3**    |
| LOOKOUT MOUNTAIN SNOTEL           | 8150      | 3/15           | -                   | 0.0                    | -                      | -         |
| McKnight Cabin * (A)              | 9300      | NOT SCHEDULED  |                     |                        | -                      | 3.5**     |
| Mogollon                          | 7000      | 3/8            | 0                   | 0.0                    | -                      | 0.4       |
| Nutriosio                         | 8500      | 3/15           | 6                   | 0.9                    | 2.7                    | 1.5       |
| Redstone Trail                    | 8600      | 3/8            | 23                  | 8.4                    | -                      | 7.1       |
| Rose Canyon                       | 7300      | 3/15           | 4                   | 1.1                    | 0.9                    | 1.9       |
| SIGNAL PEAK SNOTEL                | 8360      | 3/15           | -                   | 5.2                    | -                      | -         |
| Silver Creek Divide               | 9070      | 3/8            | 36                  | 11.9                   | 7.0 E                  | 10.8**    |
| SILVER CREEK SNOTEL               | 9070      | 3/15           | -                   | 14.5                   | 7.0                    | -         |
| State Line                        | 8000      | 3/15           | 8                   | 1.0                    | 2.4                    | 1.9       |
| Whitewater (A)                    | 10750     | NOT SCHEDULED  |                     |                        | -                      | 19.7**    |
| VERDE RIVER                       |           |                |                     |                        |                        |           |
| Baker Butte                       | 7330      | 3/10           | 9                   | 3.4                    | 3.6                    | 6.0**     |
| BAKER BUTTE SNOTEL                | 7330      | 3/15           | -                   | 3.3                    | 3.6                    | -         |
| Baker Butte #2                    | 7700      | 3/10           | 41                  | 15.9                   | 7.4                    | 12.1**    |
| Camp Wood                         | 5700      | 3/15           | T                   | 0.0                    | 0.0                    | 0.4       |
| Chalender *                       | 7100      | 3/16           | 10                  | 3.1                    | -                      | 2.6       |
| Copper Basin Divide               | 6720      | 3/15           | 5                   | 0.9                    | 2.0                    | 1.6       |
| Fort Valley                       | 7350      | 3/15           | 4                   | 0.8                    | 0.6                    | 2.0       |
| FRY SNOTEL                        | 7200      | 3/15           | -                   | 2.6                    | 2.1                    | -         |
| Gaddes Canyon                     | 7600      | 3/15           | 31                  | 11.4                   | 4.2                    | 5.6       |
| Happy Jack                        | 7630      | 3/15           | 15                  | 7.1                    | 2.7                    | 3.4       |
| Iron Springs *                    | 6200      | 3/15           | 1                   | 0.3                    | 0.0                    | 0.4       |
| Mingus Mountain                   | 7100      | 3/15           | 2                   | 0.5                    | 0.3                    | 0.9       |
| Mormon Lake*                      | 7350      | 3/15           | 11                  | 2.6                    | 2.0                    | 4.2       |
| Mormon Mountain                   | 7500      | 3/15           | 23                  | 8.2                    | 2.4                    | 5.8       |
| MORMON MOUNTAIN SNOTEL            | 7500      | 3/15           | -                   | 8.4                    | 3.6                    | -         |
| Mormon Mtn. Summit #2             | 8470      | NOT SCHEDULED  |                     |                        | -                      | -         |
| Newman Park                       | 6750      | 3/15           | 3                   | 0.7                    | 0.4                    | 1.9       |
| Snow Bowl #1                      | 10260     | 3/13           | 60                  | 16.5                   | 4.8                    | 10.2      |
| Snow Bowl #2                      | 11000     | 3/13           | 80                  | 23.5                   | 9.5                    | 17.0**    |
| SUGAR LOAF SNOTEL                 | 6120      | 3/15           | -                   | 0.0                    | 0.0                    | -         |
| White Horse Lake Jct.             | 7180      | 3/16           | 10                  | 2.6                    | 1.4                    | 3.2**     |
| WHITE HORSE LAKE JCT. SNOTEL      | 7180      | 3/15           | -                   | 3.3                    | 3.3                    | -         |
| White Spar                        | 6000      | 3/15           | 4                   | 0.4                    | 0.0                    | 0.5       |

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. E = estimate.



**SNOW** ABOUT MARCH 15, 1982

| DRAINAGE BASIN and or SNOW COURSE |           | THIS YEAR      |                     |                        | PAST RECORD            |           |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|-----------|
|                                   |           | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (Inches) |           |
|                                   |           |                |                     |                        | Last Year              | Average † |
| NAME                              | Elevation |                |                     |                        |                        |           |
| <u>LITTLE COLORADO RIVER</u>      |           |                |                     |                        |                        |           |
| Baldy                             | 9220      | 3/11           | 21                  | 7.4                    | 4.6                    | 7.3       |
| BALDY SNOTEL                      | 9220      | 3/15           | -                   | 9.5                    | 7.4                    | -         |
| Canyon Creek                      | 7500      | 3/10           | 3                   | 1.1                    | 2.1                    | 3.5       |
| Canyon Point                      | 7600      | 3/10           | 7                   | 2.3                    | 2.5                    | 3.9**     |
| Cheese Springs                    | 8600      | 3/11           | 22                  | 7.3                    | 5.4                    | 6.9**     |
| Forest Dale                       | 6430      | 3/15           | 2                   | 0.5                    | 0.0                    | 0.5       |
| Ft. Apache                        | 9160      | 3/11           | 25                  | 8.0                    | 7.2                    | 7.8       |
| Fort Valley                       | 7350      | 3/15           | 4                   | 0.8                    | 0.6                    | 2.0       |
| Happy Jack                        | 7630      | 3/15           | 15                  | 7.1                    | 2.7                    | 3.4       |
| Heber                             | 7640      | 3/10           | 5                   | 2.0                    | 2.2                    | 3.8       |
| HEBER SNOTEL                      | 7640      | 3/15           | -                   | 0.0                    | 3.1                    | -         |
| Lake Mary                         | 6970      | 3/15           | 3                   | 0.9                    | 0.0                    | -         |
| McNary                            | 7225      | 3/15           | 6                   | 1.0                    | 3.3                    | 2.0       |
| McNARY SNOTEL                     | 7225      | 3/15           | -                   | 0.0                    | 2.3                    | -         |
| Mormon Lake                       | 7350      | 3/15           | 11                  | 2.6                    | 2.0                    | 4.2       |
| Mormon Mountain                   | 7500      | 3/15           | 23                  | 8.2                    | 2.4                    | 5.8       |
| MORMON MOUNTAIN SNOTEL            | 7500      | 3/15           | -                   | 8.4                    | 3.6                    | -         |
| Mormon Mtn. Summit #2             | 8470      | NOT SCHEDULED  |                     |                        | -                      | -         |
| Nutriosio *                       | 8500      | 3/15           | 6                   | 0.9                    | 2.7                    | 1.5       |
| Promontory Butte                  | 7900      | 3/10           | 38                  | 14.9                   | 8.2                    | 12.7 **   |
| PROMONTORY SNOTEL                 | 7900      | NO REPORT      |                     |                        | 7.4                    | -         |
| Snow Bowl #1                      | 10260     | 3/13           | 60                  | 16.5                   | 4.8                    | 10.2      |
| Snow Bowl #2                      | 11000     | 3/13           | 80                  | 23.5                   | 9.5                    | 17.0**    |
| Wilson Lake                       | 9000      | 3/11           | 34                  | 11.5                   | 8.1                    | 10.5**    |

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.



# PRECIPITATION (Inches) ABOUT APRIL 1, 1982

| DRAINAGE BASIN and<br>PRECIPITATION GAGE LOCATION | ELEVATION | CURRENT INFORMATION |                          |           | FROM APPROX NOV 1 TO DATE |           |                       |
|---|-----------|---------------------|--------------------------|-----------|---------------------------|-----------|-----------------------|
|   |           | Date of<br>Reading  | Month's<br>Precipitation | Average † | This Year                 | Average † | Percent of<br>Average |
| <u>GILA RIVER</u>                                 |           |                     |                          |           |                           |           |                       |
| Silver Creek Divide                               | 9000      | NO REPORT           |                          | 2.84*     | -                         | 13.35     | -                     |
| Hannagan Meadows **                               | 9030      | 3/30                | 4.60                     | 2.31      | 15.70                     | 11.90     | 132                   |
| Frisco Divide **                                  | 8000      | 3/31                | 2.02                     | 1.32      | 7.27                      | 5.85      | 124                   |
| <u>SALT RIVER</u>                                 |           |                     |                          |           |                           |           |                       |
| Canyon Point                                      | 7600      | 3/31                | 7.47                     | 3.82*     | 24.21                     | 16.45     | 147                   |
| Hannagan Meadows **                               | 9030      | 3/30                | 4.60                     | 2.31      | 15.70                     | 11.90     | 132                   |
| Little Wildcat<br>(Heber Snow Course)             | 7600      | 3/31                | 6.32                     | 3.20      | 21.15                     | 14.38     | 147                   |
| Maverick Fork                                     | 9050      | 4/2                 | 3.80                     | 2.57      | 14.60                     | 12.47     | 117                   |
| Workman Creek **                                  | 6970      | 3/31                | 7.00                     | 3.50      | 27.33                     | 16.69     | 164                   |
| Wilson Lake                                       | 9100      | 4/1                 | 4.70                     | 3.18*     | 15.00                     | 12.14     | 124                   |
| <u>VERDE RIVER</u>                                |           |                     |                          |           |                           |           |                       |
| Baker Butte                                       | 7300      | 4/1                 | 7.35                     | 3.45*     | 23.44                     | 15.82     | 148                   |
| Copper Basin Divide                               | 6720      | 3/30                | 6.75                     | 3.01      | 18.45                     | 11.90     | 155                   |
| Fort Valley **                                    | 7350      | 3/30                | 4.75                     | 2.20      | 13.88                     | 8.86      | 157                   |
| Happy Jack **                                     | 7480      | 3/30                | 6.36                     | 2.66      | 22.04                     | 12.02     | 183                   |
| Mingus Mountain                                   | 7660      | 3/30                | 4.41                     | 2.46      | 16.81                     | 9.71      | 173                   |
| Mormon Mountain                                   | 7500      | 3/31                | 9.50                     | 3.94      | 27.61                     | 17.14     | 161                   |
| White Horse Lake Jct.**                           | 7150      | 3/31                | 7.40                     | 3.37      | 21.80                     | 14.58     | 150                   |
| <u>LITTLE COLORADO</u>                            |           |                     |                          |           |                           |           |                       |
| Greer Lakes                                       | 8500      | 4/2                 | 2.10                     | 1.41      | 6.50                      | 6.40      | 102                   |
| Little Wildcat<br>(Heber Snow Course)             | 7600      | 3/31                | 6.32                     | 3.20      | 21.15                     | 14.38     | 147                   |
| Sheep Crossing<br>(Baldy Snow Course)             | 9125      | 4/2                 | 3.90                     | 2.61      | 14.62                     | 11.48     | 127                   |
| † 1963-77 Average                                 |           |                     |                          |           |                           |           |                       |
| * Adjusted Average                                |           |                     |                          |           |                           |           |                       |
| ** Data Supplied by U. S. Forest Service          |           |                     |                          |           |                           |           |                       |

PRECIPITATION (Inches) ABOUT APRIL 1, 1982 (SNOTEL SITES)

| DRAINAGE BASIN and<br>PRECIPITATION GAGE LOCATION | ELEVATION | CURRENT INFORMATION |                          |           | FROM APPROX NOV 1 TO DATE |           |                       |
|---|-----------|---------------------|--------------------------|-----------|---------------------------|-----------|-----------------------|
|   |           | Date of<br>Reading  | Month's<br>Precipitation | Average † | This Year                 | Average † | Percent of<br>Average |
| <u>GILA RIVER</u>                                 |           |                     |                          |           |                           |           |                       |
| Coronado Trail                                    | 8400      | 4/1                 | 3.0                      | -         | 10.0                      | -         | -                     |
| Hannagan Meadows                                  | 8960      | 4/1                 | 4.1                      | -         | 15.1                      | -         | -                     |
| Frisco Divide                                     | 8000      | 4/1                 | 2.2                      | -         | 7.5                       | -         | -                     |
| Silver Creek Divide                               | 9000      | 4/1                 | 4.7                      | -         | 17.1                      | -         | -                     |
| Lookout Mountain                                  | 8150      | 3/31                | 2.1                      | -         | 9.3                       | -         | -                     |
| Signal Peak                                       | 8360      | 4/1                 | 2.4                      | -         | 14.0                      | -         | -                     |
| <u>SALT RIVER</u>                                 |           |                     |                          |           |                           |           |                       |
| Promontory Butte                                  | 7930      | NO REPORT           |                          | -         | -                         | -         | -                     |
| Heber   | 7640      | 4/1                 | 6.7                      | -         | 21.4                      | -         | -                     |
| Hawley Lake                                       | 8250      | 4/1                 | 5.9                      | -         | 20.1                      | -         | -                     |
| McNary  | 7200      | 4/1                 | 4.5                      | -         | 14.8                      | -         | -                     |
| Bonito Rock                                       | 8270      | 4/1                 | 5.8                      | -         | 20.0                      | -         | -                     |
| Hannagan Meadows                                  | 8960      | 4/1                 | 4.1                      | -         | 15.1                      | -         | -                     |
| Maverick Fork                                     | 9050      | 4/1                 | 3.6                      | -         | 14.7                      | -         | -                     |
| Coronado Trail                                    | 8400      | 4/1                 | 3.0                      | -         | 10.0                      | -         | -                     |
| Workman Creek                                     | 6900      | 4/1                 | 7.8                      | -         | 28.9                      | -         | -                     |
| <u>VERDE RIVER</u>                                |           |                     |                          |           |                           |           |                       |
| White Horse Lake Jct.                             | 7180      | 4/1                 | 7.2                      | -         | 21.1                      | -         | -                     |
| Fry   | 7200      | 4/1                 | 7.7                      | -         | 21.4                      | -         | -                     |
| Mormon Mountain                                   | 7500      | 4/1                 | 8.7                      | -         | 24.2                      | -         | -                     |
| Sugar Loaf  | 6120      | 4/1                 | 4.8                      | -         | 16.0                      | -         | -                     |
| Baker Butte                                       | 7300      | 3/31                | 7.2                      | -         | 23.0                      | -         | -                     |
| <u>LITTLE COLORADO</u>                            |           |                     |                          |           |                           |           |                       |
| Baldy   | 9125      | 4/1                 | 3.4                      | -         | 13.9                      | -         | -                     |
| McNary  | 7200      | 4/1                 | 4.5                      | -         | 14.8                      | -         | -                     |
| Heber   | 7640      | 4/1                 | 6.7                      | -         | 21.4                      | -         | -                     |
| Promontory Butte                                  | 7930      | NO REPORT           |                          | -         | -                         | -         | -                     |
| Snotel data edited                                |           |                     |                          |           |                           |           |                       |

Snotel data edited

## SNOW COURSE

## SNOW SURVEYORS DURING 1982

|                            |  |
|----------------------------|--|
| Agassiz                    | SCS (Jorgensen, Goodman)   |
| Baker Butte #1 & #2        | SCS (Jones, Enz, Bathurst, Glasgow)  |
| Baldy #1                   | SCS (Thompson, Wood, Gregory)  |
| Baldy #2 & #3              | SCS (Jones)  |
| Bear Wallow                | Coronado N.F. (Cervantes, Laplander, Lelo, Moore)                                |
| Beaver Head                | Apache-Sitgreaves N.F. (Bonomo, Hall, Vahle, Rethlahe)                           |
| Bill Williams Intermediate | Kaibab N.F. (Linfoot, Powell, Robles, Rowe)                                      |
| Bill Williams Summit       | Kaibab N.F. (Linfoot, Powell, Robles, Rowe)                                      |
| Bright Angel               | National Park Service (Mitchell, Fields)   |
| Camp Wood                  | Prescott N.F. (Ewlberg)  |
| Canyon Creek               | SCS (Jones, Enz)   |
| Canyon Point               | SCS (Jones, Enz)   |
| Chalender                  | Kaibab N.F. (Hart, Richardson, Kramer, Winchester, Dawson)                       |
| Cheese Springs             | SCS (Thompson, Wood, Gregory)  |
| Copper Basin Divide        | SCS (Jalving, Wilkerson, Davies)   |
| Coronado Trail             | Apache-Sitgreaves N.F. (Bonomo, Dyson, Hall, Vahle, Rethlahe)                    |
| Emory Pass #2              | SCS (Bray, Garcia, Williams, McNatt)   |
| Forest Dale                | Bureau of Indian Affairs (Endfield, Grippen, King, Granfelt, Weltmer, Ethelbach) |
| Ft. Apache                 | SCS (Thompson, Wood, Gregory)  |
| Ft. Valley                 | Rocky Mountain Forest and Range Experiment Station                               |
| Frisco Divide              | Gila N.F. (Gibbons, Cordts)  |
| Gaddes Canyon              | SCS (Paul Lidbeck - Contract)  |
| Grand Canyon               | National Park Service (Van Sice, Cataland, McKinney, King, Faust)                |
| Hannagan Meadows           | Apache-Sitgreaves N.F. (Bonomo, Dyson, Vahle, Rethlahe)                          |
| Happy Jack                 | Coconino N.F. (Allred, Polequira, Sorenson, Jenner, Quanimptwa)                  |
| Hawley Lake                | Bureau of Indian Affairs (Endfield, Grippen, King, Granfelt, Weltmer, Ethelbach) |
| Heber                      | SCS (Jones, Enz)   |
| Hummingbird                | SCS (Alexander, Miller)  |
| Inner Basin #1 (Bear Paw)  | SCS (Francisco, Jorgensen, Goodman, Leverton)                                    |
| Inner Basin #2 (Snowslide) | SCS (Francisco, Jorgensen, Goodman, Leverton)                                    |
| Iron Springs               | SCS (Jalving, Wilkerson, Davies)   |
| Lake Mary                  | SCS (Francisco, Alam, Jorgensen, Kriz, King)                                     |
| Maverick Fork              | SCS (Thompson, Wood, Gregory)  |
| McKnight Cabin             | SCS (Alexander, Bray, Garcia, Miller)  |
| McNary                     | Bureau of Indian Affairs (Endfield, Grippen, King, Granfelt, Weltmer, Ethelbach) |
| Milk Ranch                 | Bureau of Indian Affairs (Endfield, Grippen, King, Granfelt, Weltmer, Ethelbach) |
| Mingus Mountain            | SCS (Paul Lidbeck - Contract)  |
| Mogollon                   | SCS (Jones)  |
| Mormon Lake                | SCS (Francisco, Jorgensen, King, Alam, Kriz)                                     |
| Mormon Mountain            | SCS (Francisco, Jorgensen, King, Alam, Kriz)                                     |
| Mormon Mountain Summit     | SCS (Jorgenson, King)  |
| Mt. Ord                    | SCS (Jones, Thompson)  |

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SNOW COURSE

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Newman Park  
Nutrioso  
  
Promontory Butte  
Redstone Trail  
Rose Canyon  
Silver Creek Divide  
Smith Cienega  
Snow Bowl #1 & #2  
State Line  
Sunrise Summit  
White Horse Lake Jct.  
  
White Spar  
Whitewater  
Williams Ski Run  
  
Wilson Lake  
Workman Creek

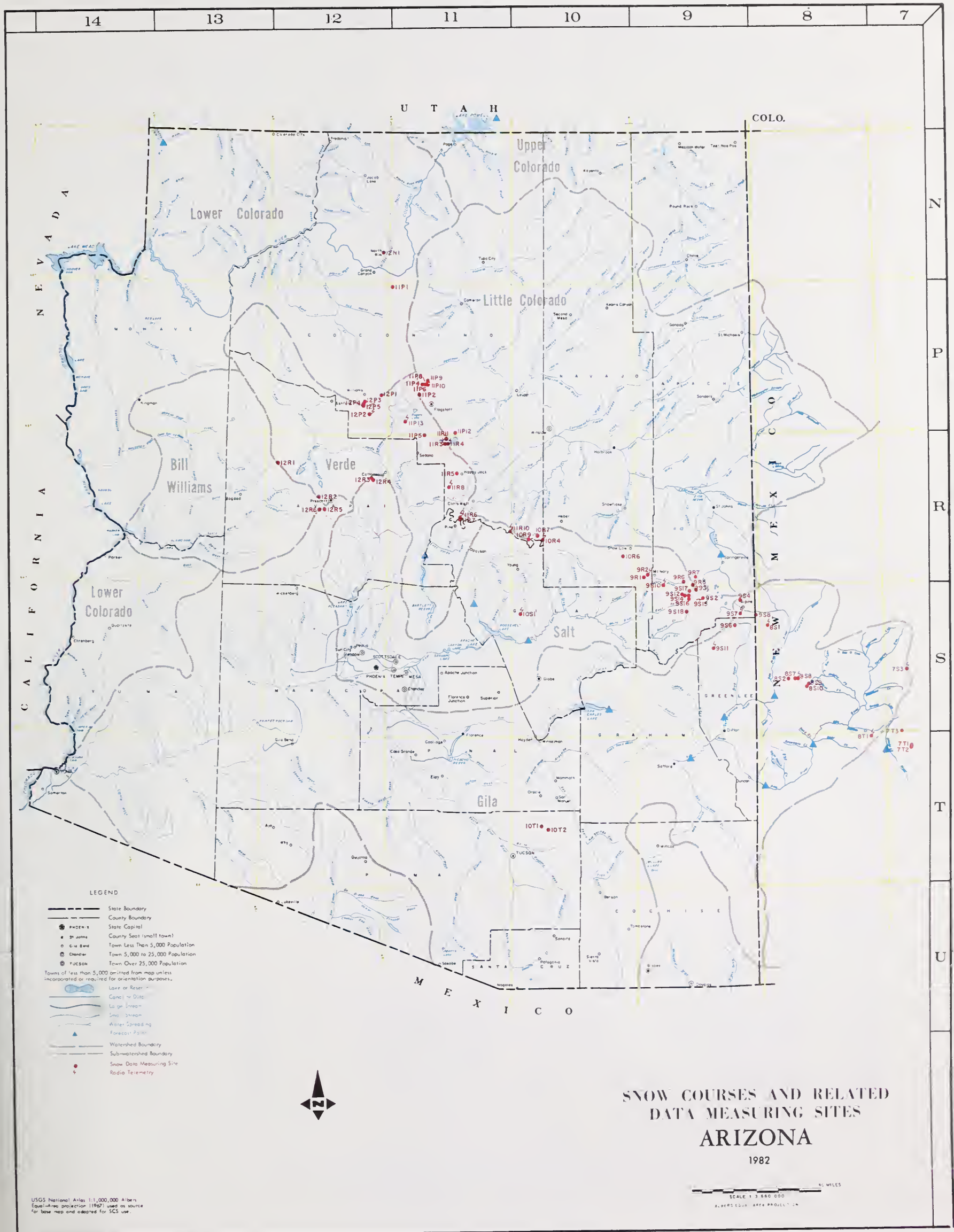
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SNOW SURVEYORS DURING 1982

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SCS (Francisco, Jorgensen, King, Alam, Kriz)  
Apache-Sitgreaves N.F. (Bonomo, Dyson, Hall,  
Vahle, Rethlahe)  
SCS (Jones, Enz)  
SCS (Jones)  
Coronado N.F. (Laplander, Lelo, Moore, Cervantes)  
SCS (Jones)  
SCS (Jones, Thompson)  
Coconino N.F. (Holden, McHenry)  
Gila N.F. (Gibbons, Cordts)  
SCS (Thompson, Wood, Gregory)  
Kaibab N.F. (Linfoot, Powell, Gillett, Rowe,  
Edwards)  
SCS (Jalving, Wilkerson, Davies)  
SCS (Alexander, Bray, Miller)  
Kaibab N.F. (Linfoot, Powell, Gillett, Rowe,  
Edwards)  
SCS (Thompson, Wood, Gregory)  
Rocky Mountain Forest and Range Experimental  
Station





# INDEX TO SNOW COURSES

| NUMBER     | NAME                      | SEC. | TWP. | RGE.  | ELEV. | DRAINAGE           | OBSERVER | RECORD BEGAN |
|------------|---------------------------|------|------|-------|-------|--------------------|----------|--------------|
| 11P10A     | Agassiz                   | 32   | 23N  | 7E    | 11200 | Little Colorado    | SCS-CF*  | 1968         |
| 11R6PSPRT  | Baker Butte               | 4    | 12N  | 9E    | 7300  | Verde              | SCS      | 1966         |
| 11R7       | Baker Butte #2            | 9    | 12N  | 9E    | 7700  | Verde              | SCS      | 1971         |
| 9S1APSPRT  | Baldy                     | 28   | 7N   | 27E   | 9125  | Little Colorado    | SCS      | 1950         |
| 9S15       | Baldy #2                  | 12   | 6N   | 26E   | 9750  | Little Colorado    | SCS      | 1963         |
| 9S16       | Baldy #3                  | 13   | 6N   | 26E   | 10950 | Little Colorado    | SCS      | 1963         |
| 10T1       | Bear Wallow               | 6    | 12S  | 16E   | 8100  | Gila               | FS       | 1948         |
| 9S6        | Beaver Head               | 13   | 4N   | 30E   | 8000  | San Francisco      | FS       | 1938         |
| 12P5       | Bill William Intermediate | 17   | 21N  | 2E    | 8550  | Cataract           | FS       | 1967         |
| 12P4       | Bill Williams Summit      | 17   | 21N  | 2E    | 8950  | Verde              | FS       | 1967         |
| 9S18PSPRT  | Bonito Rock               |      | 5N   | 26E   | 8270  | Salt               | SCS      | 1979         |
| 12N1       | Bright Angel              | 34   | 33N  | 3E    | 8400  | Bright Angel Creek | NPS      | 1947         |
| 12R1       | Camp Wood                 | 3    | 16N  | 6W    | 5700  | Verde              | FS       | 1946         |
| 10R7       | Canyon Creek #2           | 18   | 11N  | 15E   | 7500  | Little Colorado    | SCS      | 1958         |
| 10R9P      | Canyon Point              | 28   | 11N  | 14E   | 7600  | Salt               | SCS      | 1967         |
| 12P1       | Chalender                 | 27   | 22N  | 3E    | 7100  | Verde              | FS       | 1947         |
| 9R7        | Cheese Springs            | 28   | 8N   | 27E   | 8600  | Little Colorado    | SCS      | 1969         |
| 12R6P      | Copper Basin Divide       | 23   | 13N  | 3W    | 6720  | Verde              | SCS      | 1963         |
| 9S7PSPRT   | Coronado Trail            | 26   | 5N   | 30E   | 8000  | San Francisco      | FS       | 1938         |
| 7T1        | Emory Pass #1             | 16   | 16S  | 9W**  | 7800  | Mimbres            | SCS      | 1967         |
| 7T2        | Emory Pass #2             | 16   | 16S  | 9W**  | 7800  | Mimbres            | SCS      | 1967         |
| 11P13PSPRT | Fry                       | 35   | 20N  | 5E    | 7220  | Verde              | SCS      | 1978         |
| 10R6       | Forest Dale               | 2    | 9N   | 21E   | 6430  | Salt               | BIA      | 1939         |
| 9R5        | Ft. Apache                | 18   | 7N   | 27E   | 9160  | Little Colorado    | SCS      | 1951         |
| 11P2P      | Ft. Valley                | 22   | 22N  | 6E    | 7350  | Little Colorado    | FS       | 1947         |
| 8S1PSPRT   | Frisco Divide             | 31   | 6S   | 20W** | 8000  | San Francisco      | FS       | 1938         |
| 12R4       | Gaddes Canyon             | 11   | 15N  | 2E    | 7600  | Verde              | SCS      | 1954         |
| 11P1       | Grand Canyon              | 21   | 30N  | 4E    | 7500  | Hance Creek        | NPS      | 1947         |
| 9S11PSPRT  | Hannagan Meadows          | 19   | 3N   | 29E   | 9090  | San Francisco      | FS       | 1964         |
| 11R5P      | Happy Jack                | 30   | 16N  | 9E    | 7630  | Verde              | FS       | 1951         |
| 9R10PSPRT  | Hawley Lake               | 13   | 7N   | 24E   | 8300  | Salt               | BIA      | 1966         |
| 10R4PSPRT  | Heber                     | 28   | 11N  | 15E   | 7600  | Little Colorado    | SCS      | 1950         |
| 8S9A       | Hummingbird               | 19   | 11S  | 17W** | 10550 | Gila               | SCS      | 1964         |
| 11P9P      | Inner Basin #1            | 28   | 23N  | 7E    | 10000 | Little Colorado    | SCS-CF*  | 1967         |
| 11P8P      | Inner Basin #2            | 28   | 23N  | 7E    | 9750  | Little Colorado    | SCS      | 1967         |
| 12R2       | Iron Springs              | 22   | 14N  | 3W    | 6200  | Little Colorado    | SCS      | 1946         |
| 11P12      | Lake Mary                 | 21   | 19N  | 9E    | 6930  | Little Colorado    | SCS      | 1975         |
| 7S3PSPRT   | Lookout Mountain          | 1    | 10S  | 10W   | 8500  | Gila               | SCS      | 1978         |
| 9S2APSPRT  | Maverick Fork             | 13   | 6N   | 27E   | 9150  | Salt               | SCS      | 1950         |
| 7T3A       | McKnight Cabin            | 10   | 15S  | 10W** | 9300  | Mimbres            | SCS      | 1967         |
| 9R2PSPRT   | McNary                    | 23   | 8N   | 23E   | 7200  | Salt               | BIA      | 1939         |
| 9R1        | Milk Ranch                | 33   | 8N   | 23E   | 7000  | Salt               | BIA      | 1941         |
| 12R3       | Mingus Mountain           | 3    | 15N  | 2E    | 7100  | Verde              | SCS      | 1947         |
| 8S2        | Mogollon                  | 2    | 11S  | 19W** | 7000  | San Francisco      | SCS      | 1953         |
| 11R4       | Mormon Lake               | 13   | 18N  | 8E    | 7350  | Little Colorado    | SCS      | 1947         |
| 11R3APSPRT | Mormon Mountain           | 14   | 18N  | 8E    | 7500  | Verde              | SCS      | 1950         |
| 11R11      | Mormon Mountain Summit #2 | 2    | 18N  | 8E    | 8470  | Little Colorado    | SCS      | 1975         |
| 9S12A      | Mt. Ord                   | 4    | 6N   | 26E   | 11200 | Salt               | SRP-SCS  | 1966         |
| 11P5       | Newman Park               | 25   | 19N  | 6E    | 6750  | Verde              | SCS      | 1963         |
| 9S4        | Nutrioso                  | 23   | 6N   | 30E   | 8500  | San Francisco      | FS       | 1938         |
| 11R10PSPRT | Promontory Butte          | 5    | 11N  | 13E   | 7930  | Little Colorado    | SCS      | 1973         |
| 8S7        | Redstone Trail            | 5    | 11S  | 18W** | 8600  | San Francisco      | SCS      | 1961         |
| 10T2       | Rose Canyon               | 15   | 12S  | 16E   | 7300  | Gila               | FS       | 1948         |
| 8T1PSPRT   | Signal Peak               | 13   | 16S  | 13W   | 8360  | Gila               | SCS      | 1977         |
| 8S8PSPRT   | Silver Creek Divide       | 4    | 11S  | 18W** | 9000  | San Francisco      | SCS      | 1964         |
| 9S14A      | Smith Cienega             | 10   | 6N   | 26E   | 10050 | Salt               | SRP-SCS  | 1966         |
| 11P4       | Snow Bowl #1              | 36   | 23N  | 6E    | 10260 | Verde              | FS       | 1961         |
| 11P6       | Snow Bowl #2              | 31   | 23N  | 7E    | 11000 | Verde              | FS       | 1965         |
| 9S8        | State Line                | 6    | 6S   | 21W** | 8000  | San Francisco      | FS       | 1938         |
| 9S17       | Sunrise Summit            | 36   | 7N   | 26E   | 10600 | Salt               | SCS      | 1972         |
| 11R8PSPRT  | Sugarloaf                 | 8    | 8E   | 14N   | 6120  | Verde              | SCS      | 1978         |
| 12P2PSPRT  | White Horse Lake Jct.     | 2    | 20N  | 2E    | 7180  | Verde              | FS       | 1967         |
| 12R5       | White Spar                | 19   | 13N  | 2W    | 6000  | Verde              | SCS      | 1963         |
| 8S10A      | Whitewater                | 19   | 11S  | 17W** | 10750 | Gila               | SCS      | 1964         |
| 12P3       | Williams Ski Run          | 9    | 21N  | 2E    | 7720  | Cataract           | FS       | 1967         |
| 9R6P       | Wilson Lake               | 4    | 7N   | 26E   | 9000  | Salt               | SCS      | 1966         |
| 10S1PSPRT  | Workman Creek             | 33   | 6N   | 14E   | 6900  | Salt               | FS       | 1952         |

A Aerial Snow Depth Marker  
P Precipitation Storage Gage  
R Radio Telemetry (SNOTEL)

SP Snow Pressure Pillow  
T Temperature  
\*\* NM Principal Meridian  
\* City of Flagstaff



# The Following Organizations Cooperate in the Arizona Snow Survey Work

## FEDERAL

- Department of Agriculture
  - Soil Conservation Service
  - Forest Service
    - Apache-Sitgreaves Forest
    - Coconino Forest
    - Coronado Forest
    - Gila Forest
    - Kaibab Forest
    - Prescott Forest
    - Rocky Mountain Forest and Range Experiment Station
    - Tonto Forest
- Department of Commerce
  - NOAA, National Weather Service
- Department of Interior
  - Bureau of Reclamation
    - Region 111
  - Geological Survey
    - Arizona District
    - New Mexico District
  - Bureau of Indian Affairs
    - Fort Apache Reservation
    - San Carlos Irrigation Project
  - National Park Service
    - Grand Canyon National Park
- Gila Water Commissioner
  - Safford, Arizona

## STATE

- Arizona Game and Fish Department
- Arizona State Parks Board
- Arizona Department of Water Resources
- University of Arizona
  - Arizona Agricultural Experiment Station
  - Water Resource Research Center
  - Department of Watershed Management

## MUNICIPAL

- City of Flagstaff

## IRRIGATION PROJECTS

- Salt River Valley Water User's Association
  - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
  - Coolidge, Arizona
- Maricopa County Municipal Water Conservation District

## PRIVATE

- Southwest Forest Industries, Inc.
  - McNary, Arizona
- Fort Apache Indian Reservation
  - White Mountain Recreation Enterprises

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
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supply, hydro-electric power  
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*"The Conservation of Water begins  
with the Snow Survey"*